Sex, Information and Condom Use Among Peruvian Adolescents

Sexo, Información y Uso de Condón en Adolescentes Peruanos

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ABSTRACT

Introduction: there is an increasing concern for the STI /HIV infection risks within adolescents. Condoms are one of the most effective prevention strategies for STI/HIV, but there is no information available regarding knowledge, information and condom use among adolescents in Peru. **Objective:** to evaluate knowledge on STI/HIV, sources of information and sexual behaviors and analyze factors associated with sexual experience and condom use among Peruvian adolescents. **Methods:** we conducted a cross-sectional survey using a household-based multistage sampling in three Peruvian cities. The survey included 2,607 12-19 year-old adolescents. **Results:** over 80% of adolescents reported having ever heard of STIs, acknowledging teachers as their main source of information, though 40% considered school-based sexual education insufficient. 21.8% females, 41.8% males 15-19 year-old, and 1.4% females, 4.1% males 12-14 year-old reported having had sex. Only a third of adolescents reported using a condom on sexual debut. About 6.5% of males and 43% of women reported STI-related symptoms last year. Sexual experience was negatively associated with being enrolled in school for both genders (OR: 0.2 [0.1-0.3]) and positively associated with report of insufficient sexual education for males (OR: 1.7 [1.1-2.6]). School as a source of sexual knowledge was associated with condom use at last intercourse (OR: 35.7 [6.0-213.4]) for women whereas for males was knowledge of where to obtain condoms (OR: 39.6 [3.8-414.6]). For both genders, use of condom at first sexual intercourse was associated with use at recent sexual intercourse. (OR: 5.7 [1.2- 27.9]). **Conclusion**: results emphasize gender disparities in predictors of sexual experience and condom use in adolescents, and stress the connection between sexual education and risk behaviors. Data is valuable to guide national policies which need to address better school-based sexual education, accessibility to condoms and to adolescent reproductive health services.

Keywords: adolescent, sexually transmitted disease, condoms, sexual behaviour, Peru, STI

RESUMEN

Introducción*:* existe una creciente preocupación por el riesgo de los adolescentes ante la infección de por ITS/VIH. El condón es una de las estrategias más efectivas de prevención de las ITS/VIH, pero no se cuenta con información acerca de conocimiento, información o uso de condón en adolescentes en el Perú. **Objectivo**: evaluar conocimientos acerca de ITS/VIH, fuentes de información y conductas sexuales y analizar los factores asociados a experiencia sexual y uso de condones en adolescentes peruanos.**Métodos:** se realizó una encuesta de base poblacional utilizando un muestreo multietápico en 3 ciudades del Perú. La encuesta incluyó a 2,607 adolescentes con edades entre 12 y 19 años. **Resultados:** más de 80% de los adolescentes reportaron haber escuchado alguna vez acerca de las ITS, reconociendo como principal fuente de información a sus profesores(as) de colegio, sin embargo el 40% describió la educación sexual ofrecida en la escuela como insuficiente. 21.8% de las mujeres, 41.8% de los varones de 15-19 años, y 1.4% de las mujeres, 4.1% de los varones de 12-14 años reportaron haber tenido alguna vez sexo. Sólo un tercio de los adolescentes reportaron haber usado condón en su primera relación sexual. Al menos 6.5% de los varones y 43% de las mujeres reportaron síntomas asociados a ITS en el último año. Para ambos sexos, estar en el colegio se encontró negativamente asociado a tener experiencia sexual (OR: 0.2 [0.1-0.3]). Se encontró una asociación positiva entre experiencia sexual y el reporte de insuficiente educación sexual en el caso de los varones (OR: 1.7 [1.1-2.6]).En mujeres, el reporte de que la escuela era la principal fuente de información acerca de sexo se asoció de manera positiva con el uso de condón en su última relación sexual (OR: 35.7 [6.0-213.4]). En el caso de varones, el uso de condón en su última relación sexual se asoció al conocimiento de dónde obtenerlos (OR: 39.6 [3.8- 414.6]. Para ambos sexos, el uso de condón en su última relación sexual se asoció con el uso de condón en su primera relación sexual (OR: 5.7 [1.2-27.9]). **Conclusión:** los resultados enfatizan las diferencias por género en los predictores de experiencia sexual y uso de condón en adolescentes, y la importancia de la conexión entre educación sexual y conducta sexual. Esta información es valiosa para guiar políticas nacionales que debieran priorizar una mejor educación sexual en las escuelas, acceso a condones y a servicios de salud sexual y reproductiva para los adolescentes.

Palabras-clave: adolescentes, infecciones de transmisión sexual, condones, conducta sexual, Perú, ITS

INTRODUCTION

One half of the world's population is under the age of 25. Adolescents between 10-19 year-old account for 1.2 billion of these individuals[1]. In this era of STIs and HIV, there is increasing concern for the infection risk among adolescents[2,3]. Compared to other groups, sexually-active adolescents maintain the highest rates of STIs, including HIV globally[4,5]. In Peru, where adolescents represent 21.5% of the population[6], data from the National STI/ HIV Program identified that adolescents and youth (10-24 years) represent 15% of total notified cases of aids[7].

International studies have shown that condoms are the most effective strategy for STI/HIV protection[8, 9]. In Peru, a study of 15-19 year-old females showed that only 31% of sexually-active adolescents had utilized effective forms of contraception[10] and another survey found that only 29.8% females could identify condoms as a means of reducing risk of HIV infection[6]. Despite this, there is no much information on correlates of condom use among both male and female adolescents in Peru.

We proposed to evaluate STI/HIV knowledge, information sources, sexual behaviors and condom use among adolescents through a nationally representative sample in three distinct regions of Peru. We aim to determine and quantify the factors associated with sexual experience and condom use in adolescents, to guide the development of prevention programming and policy specific for this age group in Peru.

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METHODS

Study design and population

This cross-sectional study was performed in 2004 using a household-based survey. The survey included three cities (Lima-Callao, Huancayo and Iquitos) from the three regions of Peru respectively: coast, highlands and jungle.

The study population included unmarried adolescents 12-19 year-old and their mothers, all of whom were permanent residents of their cities. For the 15-19 year-old, the sampling approach involved a three stage cluster sample. The first stage was a systematic selection of the clusters with a probability proportional to the size. A census was conducted in the selected clusters to identify households with eligible adolescents. After a random sample selection of the eligible households, an adolescent (male or female) was selected systematically for the survey. Additionally, within households containing at least one 15-19 year-old, one 12-14 year-old sibling was sampled at random, and recruited for assessment. Finally, to examine parental communication, mothers of older adolescents were sampled similarly to the 12-14 year-old participants, though these findings will be discussed in another article.

The questionnaire was based on instruments used in similar international surveys[11], and questions from prior public health surveys in Peru[6, 12]. The questionnaire was piloted with adolescents in focus groups, with subsequent adjustments to improve clarity of the questions and validity of responses.

The questionnaire consisted of six sections. The first section addressed eligibility criteria. The second and fifth sections were conducted face-to-face and pertained to socio-demographic characteristics of 15-19 and 12-14 year-old respectively. Sections three and six were self-administered and included questions on sexual knowledge, behavior, information sources, intra-familial communication, use and access to condoms, reproductive history and STIs among 15-19 year-old and 12-14 year-old respectively. Section four was self-administered and collected information on communication from the mothers. The conditions of self-administration were such that no one else could observe the responses. After completion, the respondent sealed the completed questionnaire in a locked bag.

The study protocol and written informed consent and assent procedures were approved by the institutional review board of Universidad Peruana Cayetano Heredia. Participants 18 years of age or older, including mothers, provided consent for themselves. For those less than 18 years old, we obtained both personal assent and consent from the parent or legal guardian.

Data analysis

Data analysis was limited to adolescent participants and was done using the statistical package STATA v9.0. The sample was weighted using an expansion factor accounting for differential sampling probabilities. Data for mothers will be presented in a subsequent article.

Descriptive analyses were performed to explore lifestyle characteristics, knowledge, sexual experience, and condom access. Possible correlates of sexual experience and condom use were restricted to 15-19 year-old sexual experienced adolescents and were explored using bivariate analysis based on a priori selection.

In the multivariate analysis, unconditional logistic regression was performed with the statistically significant predictors of sexual experience and condom use, adjusting for demographic variables. The analysis was gender-stratified.

RESULTS

Socio-demographic information

We approached 2275 eligible 15-19 year-old adolescents of whom 2,175 agreed to participate and were included in this analysis. Approximately 56% (n = 1,180) were female. Most adolescents surveyed were born in the city of residence and were students at schools or universities. The majority of adolescents lived with one or both parents (females 84.7% and males 86%). About 2% of 15-19 year-old females lived in houses where they worked as maids in domestic service.

Among the 12-14 year-old adolescents, 523 eligible were approached, with a resulting sample of 432 (82.6% participation). The majority of adolescents reported currently being enrolled in school and living with one or both parents (**Table 1**).

Sexual knowledge

A large proportion of adolescents of both age groups reported having ever heard of STIs (12-14: 81.1% females, 83.8% males; 15-19: 96.5% females, 97.1% males), with the majority reporting teachers as their main source of information. However, more than 40% of adolescents believed sexual education in school has been insufficient (**Table 1**).

Nearly all participants reported having ever heard of condoms (12-14: 88.1% females, 85.4% males; 15-19: 97.8% females, 97.4% males) and most of them from their teachers. More than half of 12-14 year-old adolescents and 15-19 year-old females had never spoken to either parent about condom use, compared to 37% of 15-19 year-old males. A very small proportion of adolescents have ever been given condoms by their parents (12-14: 3.0% females, 8.7% males; 15-19: 15.8% males, 4.6% females). About 57% of 12-14 and 75% of 15-19 year-old, identified condoms as a way to prevent HIV infection.

A higher proportion of older adolescents stated they knew where to obtain condoms (88.5% females and 95.1% males) as compared to the younger adolescents (54.7% females, 60.6% males).

Sexual behaviors, STIs and condom use in sexually-experienced adolescents

Sexually-experienced adolescents represented 21.8% of female and 41.8% of male 15-19 year-old participants, and 1.4% females and 4.1% males in the 12-14 year-old group. The mean age of first sexual intercourse was significantly higher ($p = 0.006$) in females (16.0, range 7 to 19) than in males (15.5, range 8 to 19). Lifetime mean number of sexual partners was higher in males than in females (1.7 vs. 3.7 partners), as well as the number of partners in the last year. Around 1% of both males and females indicated that the last sexual partner was of their same sex. Females were more likely to report older last partner ($p < 0.001$).

Table 1 – Demographic characteristics of sample of unmarried adolescents 12 to 19 years old in Peru: National Urban Survey 2004[a]

Characteristics	12-14 Year Old (n = 432)[b]		15-19 Year Old (n = 2,175)[b]	
	Female n = 214	Male n = 217	Female n = 1,180	Male n = 995
Age mean	13.0	13.0	16.9	16.8
Currently enrolled in school n (%)	208 (99.1)	213 (98.6)	949 (76.2)	803 (75.9)
Born in city of residence n (%)	126 (82.9)	115 (75.6)	933 (77.5)	805 (78.3)
Household members n (%)				
One or both parents	196 (91.6)	204 (94.0)	961 (84.7)	847 (86.0)
Other relatives	15 (7.0)	10 (4.6)	160 (12.6)	120 (11.8)
Alone	2 (0.9)	3 (1.4)	17 (0.4)	19 (1.5)
Employer	1 (0.5)	0 (0.0)	42 (2.3)	3 (0.2)
Friends	0 (0.0)	0 (0.0)	0 (0.0)	4 (0.5)
Has ever heard of STIs	163 (81.1)	166 (83.8)	1,087 (96.5)	923 (97.1)
Has ever heard of STIs from teachers	162 (80.6)	167 (84.3)	1,064 (96.4)	882 (94.9)
Has ever heard of HIV	154 (76.6)	145 (73.2)	1,062 (96.2)	895 (95.1)
Reports insufficient sexual education in school	86 (44.6)	83 (42.4)	487 (42.4)	423 (40.9)
Has ever heard of condoms	177 (88.1)	169 (85.4)	1,130 (97.8)	960 (97.4)
Has ever heard of condoms from teachers	129 (64.2)	133 (67.2)	1,000 (88.0)	878 (88.8)
Has never talked with parents about condoms	109 (54.2)	112 (56.6)	586 (50.2)	379 (36.9)
Has ever talked with his father about condoms	42 (21.2)	69 (35.4)	265 (23.2)	474 (50.3)
Has ever talked with his mother about condoms	81 (40.9)	66 (33.8)	514 (44.4)	398 (44.9)

[a] Adjusted for primary sampling, strata, and weights.
[b] Subtotals do not match totals due to missing data in the database.

A small proportion of females and males, 22.1% and 18% respectively reported use of effective contraception at the first sexual encounter. Over a quarter (26.5%) of females disclosed that they have ever been pregnant, and 16.8% reported having a child.

At first sex, only a third of both males (34.1%) and females (31.5%) reported using a condom. Reported rates of condom use at last sex were significantly higher in males (52.4%) than in females (27.2%) (p = 0.001). Fewer females had ever bought a condom and both boys and girls indicated that discomfort/embarrassment at buying condoms was their major reason for not using condoms at the last sexual relation (61.6% females, 69.8% males) and few considered cost as a reason (females 3.4%, males 4.9%).

Regarding STIs over the last year, 3.2%, 2.7% and 0.6% of males self-identified as having abnormal urethral discharge, genital ulcers or genital warts, respectively. In contrast, among females, 37.8%, 3.8% and 1.4% acknowledged having had abnormal vaginal discharge, genital ulcers and genital warts, respectively.

Approximately 4% of females and 6% of males admitted to ever having had intercourse under the influence of drugs and over 20% under the influence of alcohol (**Table 2**).

Correlates of sexual experience

Bivariate analysis showed that being currently enrolled in school was significantly negatively associated with sexual experience for both females and males (OR = 0.2). The strongest correlate of sexual experience for females was identifying their significant other as the principal source of sexual knowledge (OR: 26.5 [7.2-98.2]). For males, an association was seen between sexual experience and reports of insufficient sexual education in school (OR: 1.8 [1.1-2.8]).

Among females, having discussed condom use with either parent was not associated with sexual experience, nor was having been given condoms by either parent (OR: 1.1 [0.3-3.8]).

The unconditional logistic regression showed a significant negative association between sexual experience and currently being enrolled in school for females and males (OR: 0.1 [0.1-0.3] and 0.2 [0.1-0.3] respectively). Among females there is a significant positive association for receiving sexual knowledge from a significant other (OR: 26.5 [7.2-98.2]) and among males, a significant positive association was found for reporting insufficient sexual education (OR: 1.7 [1.1-2.6]) (**Table 3**).

Table 2 – Sexual behaviors, knowledge, STIs and condom use among sexually experienced[a], unmarried adolescents 15 to 19 years old in Peru, by gender: National Urban Survey 2004[b]

Characteristics	Females (n = 1,180)[b] Sexually experienced n = 274	Males (n = 995)[b] Sexually experienced n = 445	*p*
Age at first sexual intercourse mean [range]	16.0 [7-19]	15.5 [8-19]	0.006
Lifetime number of sexual partners mean [range]	1.7 [1-19]	3.7 [1-20]	0.001
Number of sexual partners in last year mean [range]	1.3 [1-8]	2.3 [1-79]	0.002
Same sex last partner n (%)	6 (1.4)	8 (1.0)	0.07
Age of last sex partner, mean [range]	20.8 [15-66]	17.8 [12-35]	< 0.001
Reported older last partner n (%)	215 (86.3%)	130 (27.7)	< 0.001
Use of effective contraception at first sexual intercourse n (%)	50 (22.1)	83 (18.1)	0.472
Has been pregnant/ Has impregnated a partner n (%)	57 (26.5)	23 (4.2)	< 0.001
Has children n (%)	41 (16.8)	7 (1.4)	< 0.001
Condom use at first sexual intercourse n (%)	79 (31.5)	160 (34.1)	0.653
Condom use at last sexual intercourse n (%)	84 (27.2)	229 (52.4)	< 0.001
Has never bought a condom n (%)	229 (85.7)	158 (29.9)	< 0.001
Reasons for not using condom in last sexual relation n (%)			
Discomfort or embarrassment at buying condoms	158 (61.6)	260 (69.8)	0.151
Discomfort or embarrassment at visiting health center	154 (56.8)	201 (44.6)	0.052
Cost of condoms	16 (3.4)	32 (4.9)	0.457
Self-report of history of STI in last 12 months n (%)			
Abnormal vaginal or urethral discharge	93 (37.8)	12 (3.2)	< 0.001
Genital ulcers	12 (3.8)	11 (2.7)	0.58
Genital warts	7 (1.4)	8 (0.6)	0.354
Has had sexual intercourse under influence of drugs n (%)	6 (3.8)	16 (5.8)	0.514
Has had sexual intercourse under influence of alcohol n (%)	40 (21.1)	94 (21.9)	0.875

a Defined as vaginal or anal penetrative intercourse.
b Adjusted for primary sampling, strata, and weights.

Correlates of condom use at last sexual intercourse among sexually-experienced adolescents

Among females, non-familial sources of sexual knowledge were found to be related with a greater probability of condom use. Condom use was negatively associated with having ever had sexual intercourse under the influence of alcohol (OR: 0.1 [0.1-0.6]).

For both females and males, condom at first intercourse was positively associated with condom use at last sexual intercourse (OR: 8.0 [3.1-21.1]; OR: 10.7 [4.6-25.0]). Knowing why condoms are used was significantly associated with higher odds of condom use at last intercourse in females (OR: 14.4 [1.3-152.1]). Males were significantly more likely to use condoms if they knew where to obtain condoms (OR: 40.6 [4.5-364.4]), but no association was found with knowledge of how to use them (OR: 0.5 [0.2-11.0]) (**Table 4**).

Unconditional logistic regression showed that sources of sexual knowledge other than family were significantly associated with condom use at last sex for females. Additionally, for both genders, use of condom at first sexual intercourse was positively associated with condom use at most recent sexual intercourse. For males, a positive association was also found between knowledge of where to obtain condoms.

We explored possibilities to improve barriers to accessibility to condoms adding a question regarding condom vending machines. Most 15-19 year-old adolescents knew what a vending machine was (85% male and 79.3% females) and 79% and 69% of male and females considered that vending machines expending condoms could improve access.

DISCUSSION

The current study is the largest national household survey of adolescent sexual risk and prevention behavior in Latin American to date[13]. There is an important proportion of adolescents in the general population who are sexually active. The results emphasize gender disparities in predictors of sexual experience and condom use in this population, and stress the connection between sexual education and risk behaviors. Furthermore, stratification by gender provides valuable information on specific trends to guide national policies which need to address issues like better sexual education

Table 3 – Predictors of sexual experience[a] among unmarried adolescents 15 to19 years old in Peru: National Urban Survey 2004

Characteristics	OR [95% CI]	
	Crude	Adjusted
Females		
Currently enrolled in school	0.2 [0.1-0.3]	0.1 [0.1-0.3]
Significant other as principal source of sexual knowledge	26.5 [7.2-98.2]	26.3 [7.0-98.5]
Males		
Lives with one or both parents	0.3 [0.2-0.6]	0.3 [0.2-0.5]
Currently enrolled in school	0.1 [0.1-0.2]	0.2 [0.1-0.3]
Reports insufficient sexual education in school	1.8 [1.1-2.8]	1.7 [1.1-2.6]

[a] Defined as vaginal or anal penetrative intercourse.

with participation of parents and teachers, promotion of contraception, promotion and better accessibility of condoms, access to reproductive health services to adolescents etc.

For females, the most notable protective association with regards to sexual initiation was currently being enrolled in school. Similar findings have been reported in other developing countries[14-16]. Nevertheless, these are all cross-sectional studies and thus prevent the establishment of temporal relationships.

Conversely, the association between females receiving sexual knowledge from a significant other and sexual experience evidenced a need for alternative sources of sexual and reproductive health education, such as schools and parents. It is worrisome that we are leaving sexual education of female adolescents to their sexual partners.

Moreover, in our study, males reporting insufficient sexual education in school were more likely to be sexually-experienced and females exposed to sexual education at school were less likely to be sexually-experienced. These suggest that sexual education may be protective against sexual initiation during adolescence which is consistent with several studies done elsewhere[17, 18].

Women were half as likely as men reporting condom use at last sexual intercourse, despite similar rates for condom use for both genders at first intercourse. Condom use at first intercourse was found to be a predictor of condom use at last intercourse for both genders. Few earlier studies have examined this association in a gender-stratified manner and similarly have found condom use at first sex as a predictor of future condom use[13,19-22]. This highlights the need to promote condom use, which should start before sexual debut.

For females in our study, having received school-based sexual education was the strongest factor correlated of condom use in the multivariate analyses, though education through health workers, sexual partners, friends, and the media were also positively associated with condom use. These suggest that for females, programming directed at the promotion of condom use could utilize multiple approaches, though priority would best be placed on increasing the role of school-based sexual education. The efficacy of multi-faceted education efforts are supported by prior studies on condom use in adolescents from Haiti and Ghana[23, 24].

In comparison, the strongest correlate of condom use in males was knowledge of where to obtain condoms. This finding is similar to studies conducted in Cameroon and Uganda[15, 25]. Past studies in Zimbabwe, Nigeria and Ghana indicated that accessibility barriers to condom use are strongly associated with non-use of condoms in males[23, 26-27]. Our results have implications for prevention programs which should focus on the improvement of access to condoms for male but also for female adolescents, complemented with a strong educational and promotional intervention, focusing on gender diversity and condom negotiation skills for females and probably evaluating further the use of vending machines for condoms in the country.

Limitations in this study include the cross-sectional study design, which limits causal inference on predictors. Further research is needed to improve understanding of risk and protective factors over time. Finally, the use of self-reported sexual behavior data may lead to bias[28-29].

Despite limitations, this study possesses a number of strengths. It is one of the few household-based studies of sexual behaviors among adolescents, and the only one in Peru and Latin America. In addition, this study is representative of adolescents of the three major regions of Peru with a strong sampling approach. Our re-

Table 4 – Predictors of condom use among sexually-active unmarried adolescents 15 to 19 years old in Peru: National Urban Survey 2004

Characteristics	OR [95% CI]	
	Crude	Adjusted
Females		
Principal source of sexual knowledge		
Family	1.0	1.0
Health workers	68.3 [9.7-481.5]	16.5 [1.4-188.5]
School	40.7 [9.0-185.1]	35.7 [6.0-213.4]
Significant	22.8 [3.8-136.2]	14.9 [2.0-108.4]
Friends	13.9 [1.5-129.2]	18.3 [2.6-130.9]
Media	12.3 [1.6-92.5]	9.8 [1.1-190.5]
Knows why to use condoms	14.4 [1.3-152.1]	*
Use of condom at first intercourse	8.0 [3.1-21.1]	5.7 [1.2-27.9]
Males		
Knows where to obtain condoms	40.6 [4.5-364.4]	39.6 [3.8-414.6]
Use of condom at first intercourse	10.7 [4.6-25.0]	10.5 [4.3-25.7]

*Excluded from the model as the variable predicts the outcome perfectly.

sults are important for the design and implementation of innovative interventions among adolescents and have been used already in interventions for Peruvian adolescents funded through the Global Fund to fight aids, Tuberculosis and Malaria. In addition, national information supporting the importance of school-based sexual education and the availability of baseline data on adolescent's knowledge and behaviors become quite important in view of the compromise assumed by the Latin American and Caribbean countries during the XVII International Aids Conference (2008). Ministers of Health and Education signed a Ministerial Declaration aimed to Stop HIV and STIs in the region promoting "Prevention through education" for adolescents and young people.

CONCLUSION

We need to strengthen prevention activities directed to the youth. Condom promotion should be improved to focus on consistent use and to improve accessibility. Schools and parents should hold key roles in the sexual education process.

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Authors contributions

PJG was the PI of the study and lead author for the paper. C.C has contributed to the study design, implementation, data analysis and manuscript preparation. A.C contributed in the implementation and data analysis and S.S contributed to the data analysis and manuscript preparation.

REFERENCES

1. State of World Population 2005. New York: United Nations Population Fund; 2005.
2. Rivers K, Aggleton P. Adolescent Sexuality, Gender and the HIV Epidemic. [cited 2007 November 7]; Available from: http://www.undp.org/hiv/publications/gender/adolesce.htm
3. NIAID. HIV Infection in Adolescents and Young Adults, NIAID Fact Sheet. 2006 [cited 2007 November 7]; Available from: http://www.niaid.nih.gov/factsheets/hivadolescent.htm
4. Report on the Global HIV/AIDS Epidemic. Geneva, Switzerland: Joint United Nations Programme on HIV/AIDS; 2002.
5. Datta SD, Sternberg M, Johnson RE et al. Gonorrhea and chlamydia in the United States among persons 14 to 39 years of age, 1999 to 2002. Ann Intern Med 2007 Jul 17; 147(2):89-96.
6. INEI. Encuesta Demográfica y de Salud Familiar 2000 (ENDES 2000). Lima, Perú: Instituto Nacional de Estadística e Informática; 2001.
7. OGE. Boletin anual VIH/SIDA 2004. Lima, Perú: Ministerio de Salud/Oficina General de Epidemiología; 2004.
8. Celentano DD, Nelson KE, Lyles CM et al. Decreasing incidence of HIV and sexually transmitted diseases in young Thai men: evidence for success of the HIV/AIDS control and prevention program. AIDS 1998 Mar 26; 12(5):F29-36.
9. Holmes KK, Levine R, Weaver M. Effectiveness of condoms in preventing sexually transmitted infections. Bull World Health Organ 2004 Jun; 82(6):454-461.
10. Encuesta Demográfica y de Salud Familiar (ENDES), 1997. Regulación de la Fecundidad, Conocimiento y Uso de Anticonceptivos. Informe Preliminar, 1997. Lima: Instituto Nacional de Estadística e Informática/Calverton: Programa de Encuestas de Demografía y Salud; 1997.
11. FHI. Behavioral Surveillance Surveys BSS: Guidelines for repeated behavioral surveys in populations at risk of HIV. USA: Family Health International, 2000.
12. Lessons learned in the conduct, validation, and interpretation of national population based HIV surveys. Calleja JM, Marum LH, Cárcamo CP, Kaetano L, Muttunga J, Way A.
13. AIDS. 2005 May; 19 Suppl 2:S9-S17. Review.
14. Blum R, Mmari K. Risk and Protective Factors Affecting Adolescent Reproductive Health in Developing Countries. Geneva: World Health Organization – Department of Child and Adolescent Health and Development; 2006.
15. Meekers C. Gender Differentials in Adolescent Sexual Activity and Reproductive Health Risks in Cameroon. African Journal of Reproductive Health 1999; 3(2):51-67.
16. Meekers D, Ahmed G. Contemporary patterns of adolescent sexuality in urban Botswana. J Biosoc Sci 2000 Oct; 32(4):467-485.
17. Magnani RJ, Karim AM, Weiss LA et al. Reproductive health risk and protective factors among youth in Lusaka, Zambia. J Adolesc Health 2002 Jan; 30(1):76-86.
18. Kohler PK, Manhart LE, Lafferty WE. Abstinence-only and comprehensive sex education and the initiation of sexual activity and teen pregnancy. J Adolesc Health 2008 Apr; 42(4):344-351.
19. Magnani R, Macintyre K, Karim AM et al. The impact of life skills education on adolescent sexual risk behaviors in KwaZulu-Natal, South Africa. J Adolesc Health 2005 Apr; 36(4):289-304.
20. Magnani RJ, Seiber EE, Gutierrez EZ et al. Correlates of sexual activity and condom use among secondary-school students in urban Peru. Stud Fam Plann 2001 Mar; 32(1):53-66.
21. 20. Shafii T SK, Davis R, Holmes K. Is condom use habit forming?: condom use at sexual debut and subsequent condom use. Sex Transm Dis 2004; 31:366-372.
22. Hendriksen ES, Pettifor A, Lee SJ et al. Predictors of condom use among young adults in South Africa: the Reproductive Health and HIV Research Unit National Youth Survey. Am J Public Health 2007 Jul; 97(7):1241-1248.
23. Chirinos JL, Salazar VC, Brindis CD. A profile of sexually active male adolescent high school students in Lima, Peru. Cad Saude Publica 2000 Jul-Sep; 16(3):733-746.
24. Adih WK, Alexander CS. Determinants of condom use to prevent HIV infection among youth in Ghana. J Adolesc Health 1999 Jan; 24(1):63-72.
25. Holschneider SO, Alexander CS. Social and psychological influences on HIV preventive behaviors of youth in Haiti. J Adolesc Health 2003 Jul; 33(1):31-40.
26. Kamya M, McFarland W, Hudes ES et al. Condom use with casual partners by men in Kampala, Uganda. AIDS 1997 Sep; 11 Suppl 1:S61-66.
27. 26. Lavelle WM. Psychological predictors of condom use to prevent HIV transmission among Zimbabwean students. International Journal of Psychology 1991; 26(6):705-721.
28. Eden H. Use of the health belief model to predict condom use among university students in Nigeria. International Quarterly of Community Health Education 1995; 15(1):3-14.
29. Catania JA, Gibson DR, Chitwood DD et al. Methodological problems in AIDS behavioral research: influences on measurement error and participation bias in studies of sexual behavior. Psychol Bull 1990 Nov; 108(3):339-362.
30. Shew ML, Remafedi GJ, Bearinger LH et al. The validity of self-reported condom use among adolescents. Sex Transm Dis 1997 Oct; 24(9):503-510.

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